Corrosion: It's Your Fault

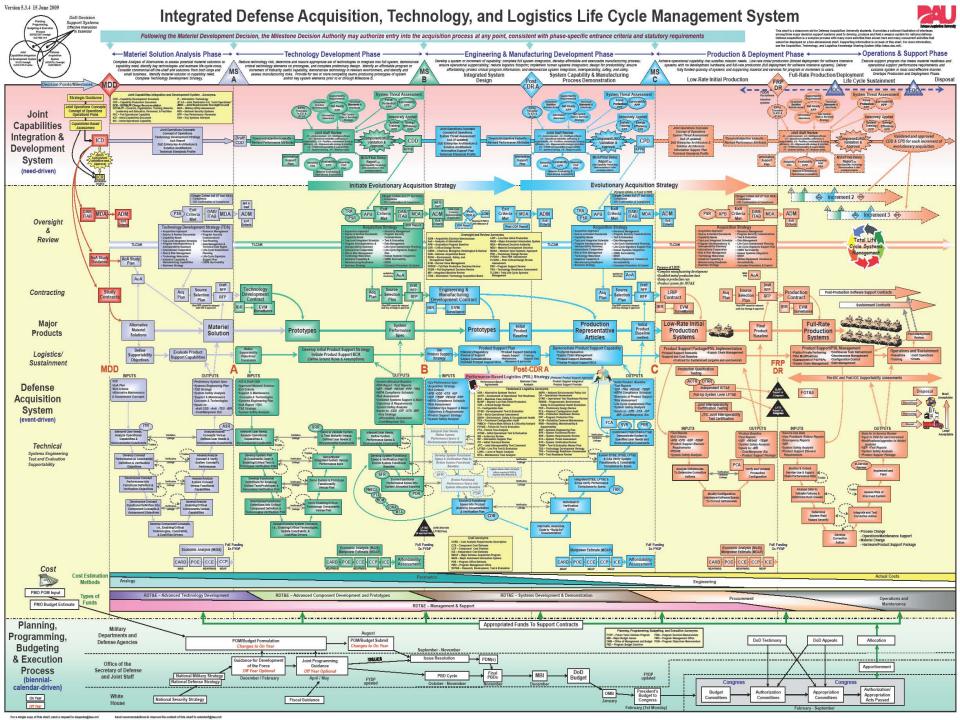
Dr. Daniel P. Verdonik Hughes Associates, Inc. 9 February 2010

a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified	Same as Report (SAR)	23			
16. SECURITY CLASSIFIC	CATION OF:	17. LIMITATION OF	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON			
15. SUBJECT TERMS							
14. ABSTRACT							
13. SUPPLEMENTARY NO 2010 U.S. Army Co	otes orrosion Summit, H	untsville, AL, 9-11	Feb. U.S. Governi	nent or Fede	ral Rights License		
12. DISTRIBUTION/AVAIL Approved for publ	LABILITY STATEMENT ic release; distributi	ion unlimited					
		11. SPONSOR/MONITOR'S REPORT NUMBER(S)					
9. SPONSORING/MONITO	RING AGENCY NAME(S) A	10. SPONSOR/MONITOR'S ACRONYM(S)					
	ZATION NAME(S) AND AE , Inc,3610 Commerc	` /	MD,21227	8. PERFORMING REPORT NUMB	G ORGANIZATION ER		
				5f. WORK UNIT NUMBER			
		5e. TASK NUMBER					
6. AUTHOR(S)		5d. PROJECT NUMBER					
		5c. PROGRAM ELEMENT NUMBER					
Corrosion: It's Yo	ur Fault		5b. GRANT NUN	MBER			
4. TITLE AND SUBTITLE				5a. CONTRACT	NUMBER		
1. REPORT DATE 09 FEB 2010			3. DATES COVERED 00-00-2010 to 00-00-2010				
including suggestions for reducing	completing and reviewing the collect this burden, to Washington Headqu uld be aware that notwithstanding ar OMB control number.	arters Services, Directorate for Inf	ormation Operations and Reports	, 1215 Jefferson Davis	Highway, Suite 1204, Arlington		

Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and

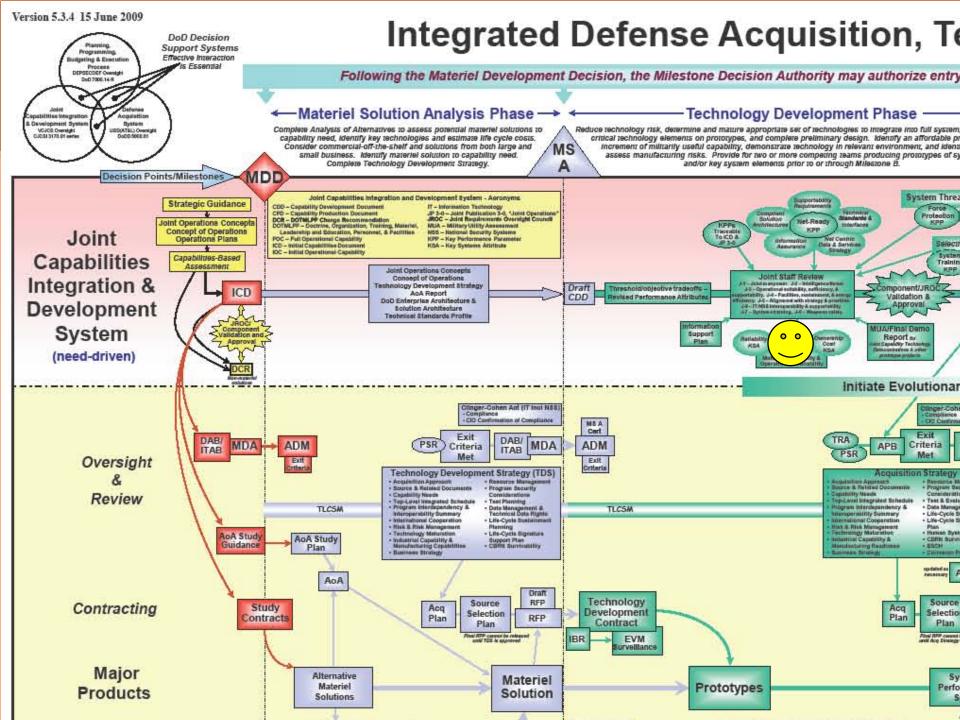
Report Documentation Page

Form Approved OMB No. 0704-0188



Huge Life Cycle

- Decades and Decades
- Increments and Modernizations
- System Life Extensions and Resets
- Budgets Go Up and Budgets Go Down
- Emphasis on Corrosion Goes Up and Down
- And Corrosion of Materiel / Facilities Goes On
 - Cannot Truly "Prevent" Corrosion Can Only Manage It



Now: 2010

```
TRADOC
            NO CPC IN ROCS ORD CDD/CPD
            RAM IS #1 ISSUE, CPC IS BOTTOM OF LIST
            LIMITED PM RESPONSE
SARDA
            CPC IS NOT NORMAL BUSINESS
SAALT
              HMMWV
                         'LET IT CORRODE'
                          NOT IN CPAT
                          TRAINING IF FREE
              Comanche
            NEW VERSION 750-1, OCT 89 SEPT 07
DA DSCLOG
               CPC IN THAT REC
    G-4
                         SOME AUTHORITY!
          SUPPORT!
 IF.
    SOME MONEY!
                                 INTEREST
                 A_{\mathsf{RM}}
               NO PROGRAM?
 THEN
```

DOD Weapon System Acquisition Reform Product Support Assessment November 2009

"Product support [system sustainment], vital to both acquisition and logistics, has been treated as the stepchild of both functions. The acquisition community has neglected it, and the logistics community seems mismatched to effectively perform its demanding scope."

DOD Weapon System Acquisition Reform Product Support Assessment November 2009

Governance - Recommendation: Improve weapon system governance so sustainment factors [think corrosion] are better considered early and consistently across a weapon system life cycle

DOD Weapon System Acquisition Reform Product Support Assessment November 2009

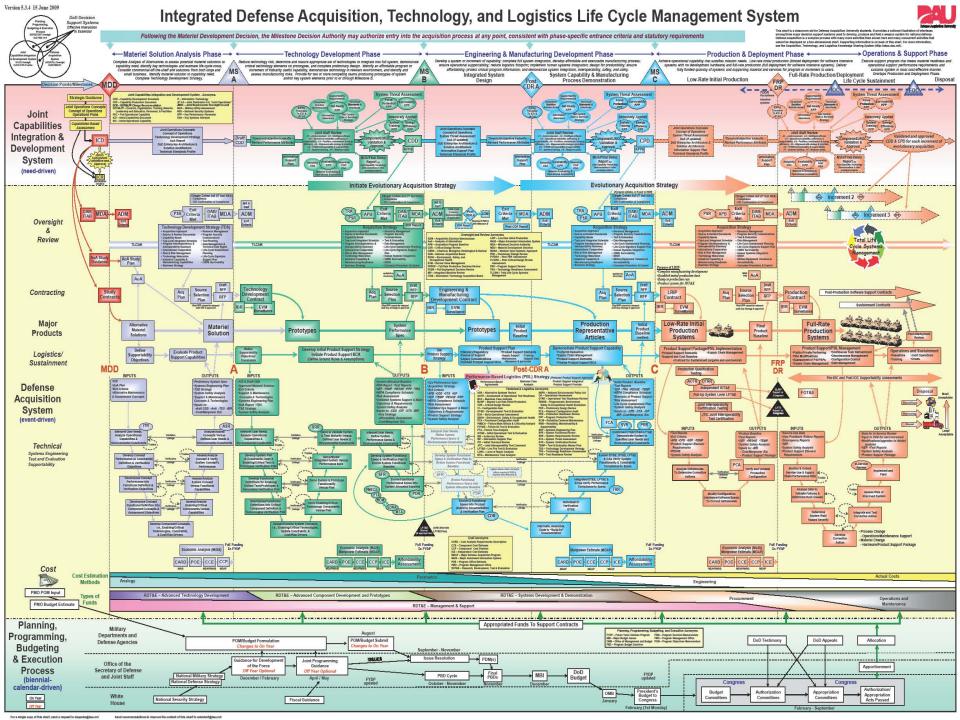
Human Capital:

- DoD must set clear objectives to integrate product support competencies across the acquisition and logistics workforce domains to institutionalize the successful traits of an outcome-based culture.
- Further, industry product support personnel, along with their government colleagues, must be more seamlessly equipped to acquire requisite product support competencies and proficiencies.

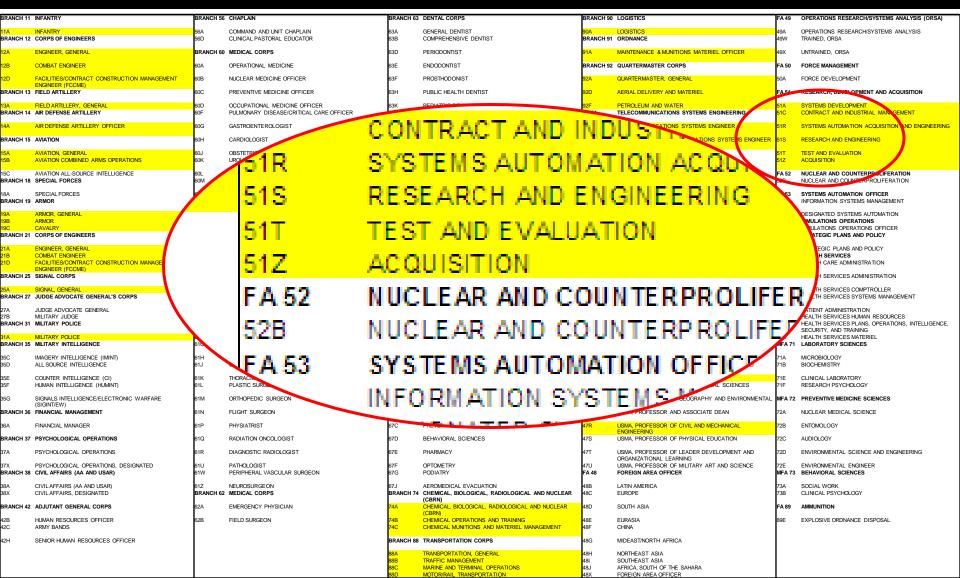
CORROSION PROGRAM
ACCREDITATION PROGRAM, BACKGROUND

- ACCREDITATION PROGRAM INITIATED SEPTEMBER, 1988
- PROGRAM WOULD FOLLOW THE NATIONAL ASSOCIATION
 OF CORROSION ENGINEERS (NACE) ACCREDITATION
 GUIDELINES
- PROGRAM TRAINING SIMILAR TO NDT TRAINING AR 702-22
- PROBLEMS:
 - NACE ESTABLISHED TO ASSIST THE PETRO-CHEMICAL INDUSTRY, NOT THE ARMY
 - TRAINING TOO TECHNICAL
 - •• EXAMPLES NOT RELEVANT TO ARMY COMMUNITY
 - PROGRAM DIFFICULT TO DUPLICATE IN ARMY SYSTEM

It's déjà vu all over again



199 OFFICER MOS: 40 CPC DIRECT, 159 CPC INDIRECT



73 WARRANT OFFICER MOS: 48 CPC DIRECT, 25 CPC INDIRECT

BRANCH 12	CORPS OF ENGINEERS	BRANCH 18	SPECIAL FORCES	BRANCH 60	MEDICAL CORPS
120A	UTILITIES OPERATION AND MAINTENANCE TECHNICIAN	180A	SPECIAL FORCES WARRANT OFFICER	BRANCH 64	VETERINARY CORPS
125D	GEOSPATIAL INFORMATION TECHNICIAN	BRANCH 21	CORPS OF ENGINEERS	640A	FOOD SAFETY OFFICER
BRANCH 13	FIELD ARTILLERY	210A	UTILITIES OPERATION AND MAINTENANCE TECHNICIAN	BRANCH 67	MEDICAL SERVICE CORPS
131A	FIELD ARTILLERY TARGETING TECHNICIAN	215D	GEOSPATIAL INFORMATION TECHNICIAN	670A	HEALTH SERVICES MAINTENANCE TECHNICIAN
BRANCH 14	AIR DEFENSE ARTILLERY	BRANCH 25	SIGNAL CORPS	BRANCH 74	CHEMICAL, BIOLOGICAL, RADIOLOGICAL AND NUCLEAR (CBRN)
140A	COMMAND AND CONTROL SYSTEMS INTEGRATOR	250N	NETWORK MANAGEMENT TECHNICIAN	740A	CHEMICAL, BIOLOGICAL, RADIOLOGICAL AND NUCLEAR (CBRN) WARRANTOFFICER
140E	AIR AND MISSILE DEFENSE (AMD) SYSTEMS TACTICIAN/TECHNICIAN	251A	INFORMATION SYSTEMS TECHNICIAN	BRANCH 88	TRANSPORTATION CORPS
140X	AIR DEFENSE ARTILLERY (ADA) IMMATERIAL	254A	SIGNAL SYSTEMS SUPPORT TECHNICIAN	880A	MARINE DECK OFFICER
BRANCH 15	AVIATION	255A	INFORMATION SERVICES TECHNICIAN	881A	MARINE ENGINEERING OFFICER
150A	AIR TRAFFIC AND AIR SPACE MANAGEMENT TECHNICIAN	255N	NETWORK MANAGEMENT TECHNICIAN	882A	MOBILITY OFFICER
150U	UNMANNED AIRCRAFT SYSTEMS OPERATIONS TECHNICIAN	255S	INFORMATION PROTECTION TECHNICIAN	BRANCH 89	AMMUNITION
151A	AVIATION MAINTENANCE TECHNICIAN (NONRATED)	255Z	SENIOR NETWORK OPERATIONS TECHNICIAN	890A	AMMUNITION TECHNICIAN
152B	OH-58A/C SCOUT PILOT (RC)	BRANCH 27	JUDGE ADVOCATE GENERAL'S CORPS	BRANCH 91	ORDNANCE
152C	OH-6 PILOT	270A	LEGAL ADMINISTRATOR	913A	ARMAMENT SYSTEMS MAINTENANCE WARRANT OFFICER
152D	OH-58D PILOT	BRANCH	NITION		ALLIED TRADES WARRANT OFFICER
152E	ARH-XX PILOT				TOMOTIVE MAINTENANCE WARRANT OFFICER
152F	AH-64A ATTACK PILOT	AMMUN	IITION TECHNICIAN		OMOTIVE MAINTENANCE WARRANT OFFICER/SENIOR STICS WARRANT OFFICER
	ANCH 91	ORDNA	NCE		
152H	AH-64D ATTACK PILOT				INTENANCE WARRANT OFFICER
153A	ROTARY WING AVIATOR (AIRCRAF	ARMAN	MENT SYSTEMS MAINTENANC	E WAI	RRANT OFFIN
153B	UH-1 PILOT (RC)		TO LOCALIZACIONE		CHNICIAN
153D	UH-60 PILOT 14A	ALLIED	TRADES WARRANT OFFICER	(AN
153E	MH-60 PILOT	ATITON	OTIVE MAINTENANCE WARD	A NITL O	I E E I P E D
153L		AUTON	IOTIVE MAINTENANCE WARR	ANII O	
153M	UH-60M PILOT	SENIOE	AUTOMOTIVE MAINTENANCE	E MAZA E	DANT ANICIAN
154C		SENIOR	AUTOMOTIVE MAINTENANCI	_ **	
154E	MH-47 PILOT	TO MINI	ER EQUIPMENT MAINTENANC	F 14.	ELECTRONIC SYSTEMS MAINTENANCE WARRANT OFFICER
154F	CH-47F PILOT	352P	TO DO WELL THE WATER OF	948D	ELECTRONIC MISSILE SYSTEMS MAINTENANCE WARRANT OFFICER
155A	FIXED WING AVIATOR (AIRCRAFT NONSPECIFIC)	352S	SIGNALS COLLECTION TECHNICIAN	948E	SENIOR ELECTRONICS MAINTENANCE WARRANT OFFICER
155E	C-12 PILOT	353T	IEW SYSTEMS MAINTENANCE TECHNICIAN		
155F	JET AIRCRAFT PILOT	BRANCH 42	ADJUTANT GENERAL CORPS		
155G	0-5A/EO-5B/RC-7 PILOT	420A	HUMAN RESOURCES TECHNICIAN		
		420C	BANDMASTER		
				1	

233 ENLISTED MOS: 134 CPC DIRECT, 99 CPC INDIRECT



343 CIVILIAN WHITE COLLAR JOBS: 16 CPC DIRECT, 35 CPC INDIRECT

Series 0000	MISCELLANEOUS OCCUPATIONS GROUP	Series 0400	NATURAL RESOURCES MANAGEMENT AND BIOLOG	SICAL SCIENCES GROUP	Series 0600	MEDICAL, HOSPITAL, DENTAL, AND PUBLIC HEALTH GROUP	Series 1100	BUSINESS AND INDUSTRY GROUP	Series 1600	EQUIPMENT, FACILITIES, AND SERVICES GROUP
						, , , , , , , , , , , , , , , , , , , ,				. , . ,
0006	Correctional Institution Administration Series	0401	General Natural Resources Management and Biological S	iciences	0667	Orthotist and Prosthetist Series	1102	Contracting Series	1601	Equipment, Facilities, and Services
007	Correctional Officer Series	0403	Microbiology		0669	Medical Records Administration Series	1103	Industrial Property Management Series	1630	Cemetery Administration Services
018	Safety and Occupational Health Management Series	0405	Pharmacology		0670	Health System Administration Series	1104	Property Disposal Series	1640	Facility Operations Services
019	Safety Technician Series Community Planning Series	0408 0410	Ecology Zpology		0671 0673	Health System Specialist Series Hospital Housekeeping Management Series	1105	Purchasing Series Procurement Clerical and Technician Series	1654 1658	Printing Services Laundry Operations Services
020	Outdoor Recreation Planning Series	0410 0413	Zoology Physiology		0673	Hospital Housekeeping Management Senes Dental Officer Series	1106	Procurement Clerical and Technician Series Property Disposal Clerical and Technician Series	1667	Laundry Operations Services Food Services
025	Park Ranger Series	0414	Entomology		0681	Dental Assistant Series	1140	Trade Specialist Series	1670	Equipment Services
028	Environmental Protection Specialist Series	0415	Toxicology		0682	Dental Hygiene Series	1144	Commissary Management Series	1603	Equipment, Facilities, and Services Assistance Series
060 062	Chaptain Series Clothing Design Series	0430 0434	Botany Plant Pathology		0683 0685	Dental Laboratory Aid and Technician Series Public Health Program Specialist Series	1145 1146	Agricultural Program Specialist Series Agricultural Marketing Series	Series 1700	EDUCATION GROUP General Education and Training Series
062 072	Clothing Design Series Fingerprint Identification Series	0434	Plant Pathology Plant Physiology		0688	Public Health Program Specialist Series Sanitarian Series	1146	Agricultural Marketing Series Agricultural Market Reporting Series	1701	General Education and Training Series Education and Training Technician Series
080	Security Administration Series	0437	Horticulture		0690	Industrial Hygiene Series	1150	Industrial Specialist Series	1710	Education and Vocational Training Series
081	Fire Protection and Prevention Series	0440	Genetics		0696	Consumer Safety Series	1152	Production Control Series	1712	Training Instruction Series
082 083	United States Marshal Series	0454 0457	Rangeland Management		0698 Series 0700	Environmental Health Technician Series VETERINARY MEDICAL SCIENCE GROUP	1160 1163	Financial Analysis Series	1715 1720	Vocational Rehabilitation Series Education Program Series
083	Police Series - Grade Evaluation Guide for Police and Security Guard Positions	0457	Soil Conservation		Series 0700	VETERINARY MEDICAL SCIENCE GROUP	1163	Insurance Examining Series	1720	Education Program Senes
084	Nuclear Materials Courier Series	0460	Forestry		0701	Veterinary Medical Science Series	1165	Loan Specialist Series	1730	Education Research Series
0085	Security Guard Series - Grade Evaluation Guide for Police and Security Guard Positions	0470	Soil Science		0704	Animal Health Technician Series	1169	Internal Revenue Officer Series	1740	Education Services Series
0086	Security Clerical and Assistance Series	0.471	Agronomy		Carias nonn	ENGINEERING AND ARCHITECTURE GROUP	1170	Resity Series	1750	Instructional Systems Series
090	Guide Series	0480	Fish and Wildlife Administration		0801	General Engineering and Architecture	1171	Appraising Series	Series 1800	ADMINISTRATIVE WORK IN THE INSPECTION, INVESTIGATION, ENFORCEMEN
		1								AND COMPLIANCE GROUP
095	Foreign Law Specialist Series	0482	Fish Biology		0803	Safety Engineering	1173	Housing Management Series	1801	General Inspection, Investigation, Enforcement, and Compliance
JOU	Foreign Law Specialist Series	U40Z	rish sidlogy		L603	Salety Engineering	11/3	riousing widnagement Series	1001	General inspection, investigation, Enforcement, and Compliance
eries 0100	SOCIAL SCIENCE, PSYCHOLOGY, AND WELFARE GROUP	0485	Wildlife Refuge Management		0804	Fire Protection Engineering	1176	Building Management Series	1805	Investigative Analysis
		L							l	
105 106	Social Insurance Administration Series Unemployment Insurance Series	0486 0487	Wildlife Biology Animal Science		U806 0807	Materials Engineering Landscape Architecture	Series 1200 1221	COPYRIGHT, PATENT, AND TRADEMARK GROUP Patent Advisor Series	1810 1811	General Investigation Criminal Investigation
110	Economist Series	0400	Grade Level Guide for Aid and Technical Work in the Bid	ogical Sciences	0808	Architecture	1222	Patent Attorney Series	1822	Mine Safety and Health Inspection
		1								•
132	Intelligence Series International Cooperation Series	0404 0421	Biological Science Technician Series Plant Protection Technician Series		0810	Civil Engineering Environmental Engineering	1223	Patent Classifying Series Patent Examining Series	1849 1850	Wage and Hour Investigation Agricultural Warehouse Inspection
136 142	International Cooperation Series Workforce Development Series	0421	Plant Protection Technician Series Range Technician Series		0830	Moderated Engineering	1226	Patent Examining Series Design Patent Examining Series	1860	Agricultural Warehouse Inspection Equal Opportunity Investigation
150	Geography Series	0458	Soil Conservation Technician Series		0000		Series 1300	DIMOION CONTRICTS CROWN	1881	Customs and Border Protection Interdiction
160	Civil Rights Analysis Series	0459	Irrigation System Operation Series	11.0	LT.	Y ASSURANCE, I	1301	General Physical Science	1889	Import Compliance
170 180	History Series Psychology Series	0462 Series 0500	Forestry Technician Series ACCOUNTING AND BUDGET GROUP			T ASSUKANCE, I		Health Physics	1895 1896	Customs and Border Protection Border Patrol Enforcement
184	Sociology Series	0501	Financial Administration and Program	•					1802	Compliance Inspection and Support Series
185	Social Work Series	0510	Accounting						1815	Air Safety Investigating Series
186	Social Services Aid and Assistant Series	0511	Auditing	(.)He/lif	W 10	ssurance Series			1825	Aviation Safety Series
187	Social Services Series Recreation Specialist Series	0512	Internal Revenue	AR CHEATH	y —	courantee denes			1862	Consumer Safety Inspection Series
188	Recreation Specialist Series Recreation Aid and Assistant Series	0526 0560	Tax Special Budget		_				1863	Food Inspection Series Customs Entry and Liquidating Series
193	Archeology Series	0503	Fig. 1	A		والمراجع والمتلاف والمستحدث والمراجع المستحد			Seri Jieuu	QUALITY ASSURANCE INSPECTION, AND GRADING GROUP
		1 .	OU	Aone		ral Commodity Gr		io series 🔪 🥕		
eries 0200	HUMAN RESOURCES MANAGEMENT GROUP Human Resources Management	0525						.3	1910	Quality Assurance Series Agricultural Commodity Grading Series
203	Human Resources Assistance	0540							Series 2000	SUPPLY GROUP
0241	Mediation Series	0544	eries 2000	CHIDE	пν	CDOILD			2000	Supply Group
243	Apprenticeship and Training Series	0545	THES ZUUU	JUFF		GROUF			2001	General Supply Series
1244	Labor Management Relations Examining Series Equal Employment Opportunity Series	056							2003	Supply Program Management Series Supply Clerical and Technician Series
eries 0300	GENERAL ADMINISTRATIVE, CLERICAL, AND OFFICE SERVICES GROUP	o	0.0	C	La Co				2010	Inventory Management Series
			00	Supp	IV C	iroun				
301 302	Miscellaneous Administration and Program Series Messenger Series	<u> </u>	~~		7 -	поор			2030	Distribution Facilities and Storage Management Series Packaging Series
	mountinger comes								2032	· condungation
303	Miscellaneous Clerk and Assistant Series	N 20	04	Channe	roll!	Supply Series			200	Sales Store Clerical Section 1
304	Information Receptionist Series		W I	STILL		Supply Selles			Series 2100	TRANSPORTATION GROUP
305	Mail and File Series Correspondence Clerk Series	08				112			2102 2110	Transportation Clerk and Assistant Series Transportation Industry Analysis Series
313	Work Unit Supervising Series	0620		-				/	2121	Railroad Safety Series
318	Secretary Series	0621	(C)-4	Sunn	N/ P	rogram Managem	ent	Meries	2123	Motor Carrier Safety Series
319	Closed Microphone Reporting Series	0622	no-o-	Jupp	ıy ı	rogrami managem	Contract of	001100	2125	Highway Safety Series
322	Clerk-Typist Series Office Automation Clerical and Assistance Series	0625 0630			_	_			2130 2131	Traffic Management Series Freight Rate Series
332	Computer Operation Series	0631	O.E	Character 1	L	lerical and Techn			2144	Cargo Scheduling Series
335	Computer Clerk and Assistant Series	0633	Ph	Sunn	W 1.	Jerical and Techn	ICIAI	n series /	2151	Dispatching Series
341	Administrative Officer Series	0635	Kinesa		7 -				2152	Air Traffic Control Series
342 343	Support Services Administration Series Management and Program Analysis Series	0637 0638	Manual Art Recreation/Cres						2154 2161	Air Traffic Assistance Series Marine Cargo Series
344	Management and Program Clerical and Assistance Series	0639	Educational Therapis	Limitation and the	to ou	/ Management Se	mic.o.		2181	Aircraft Operations Series
346	Logistics Management Series	0636	Rehabilitation Therapy Assist	HIVEH	uu i y	/ Manayement Se	1100	acs and a second	2183	Air Navigation Series
350	Equipment Operator Series	0640	Health Aid and Technician Series		-	_			2185	Aircrew Technician Series
356 357	Data Transcriber Series Coding Series	0644 0645	Medical Technologist Series Medical Technician Series		100	The state of the		Statistical Assistant Series	Series 2200 2210	INFORMATION TECHNOLOGY GROUP
360	Equal Opportunity Compliance Series	0646	Pathology Technician Series			و on Facilities and	.000	Computer Science Series	2210	monnation reconstruct management
361	Equal Opportunity Assistance Series	0647	Diagnostic Radiologic Technologist Series		A PARTY		1			
382	Telephone Operating Series Telecommunications Processing Series	0648 0649	Therapeutic Radiologic Technologist Series Medical Instrument Technician Series		1046	- Company	1			
39U 191	Telecommunications Processing Series Telecommunications Series	0649 0650	Medical Instrument Technician Series Medical Technical Assistant Series		1060	Photography Series Audiovisual Production Series	1			
391	General Telecommunication Series	0651	Respiratory Therapist Series		1082	Writing and Editing Series	1			
J94	Communications Clerical Series	0660	Pharmacist Series		1083	Technical Writing and Editing Series	1			
		0661	Pharmacy Technician Series		1084	Visual Information Series	1			
		0662 0665	Optometrist Series Speech Pathology and Audiology Series		1087	Editorial Assistance Series	1			

128 CIVILIAN TRADE LABOR JOBS: 52 CPC DIRECT, 35 CPC INDIRECT

	WIRE COMMUNICATIONS EQUIPMENT INSTALLATION AND MAINTENANCE GROUP	Series 3800	METAL WORK GROUP		Series 5000	PLANT AND ANIMAL WORK GROUP	Series 6500	AMMUNITION, EXPLOSIVES, AND TOXIC MATERIALS WORK GROUP
2502	Telecommunications Mechanic	3802	Metal Forging		5003	Gardening	6502	Explosives Operating
	ELECTRONIC EQUIPMENT INSTALLATION AND MAINTENANCE GROUP	3806	Sheet Metal Mechanic		5026	Pest Controlling	6505	Munitions Destroying
2602	Electronic Measurement Equipment Mechanic	3808	Boilermaking	O A CHARRE	A BIII	D PROCE.	6517	Explosives Test Operating
2604	Electronics Mechanic	3809	Mobile Equipment Mouse 1	PACKING	ANI	U PRUCES	Series 6600	ARMAMENT WORK GROUP
2606	Electronic Industrial Controls Mechanic	3820	Shipfitting	_			6605	Artillery Repairing
2610	Electronic Integrated Systems Mechanic	3869	Met	Packing			<mark>6610</mark>	Small Arms Repairing
Series 2800	ELECTRICAL INSTALLATION AND MAINTENANCE GROUP	Series 3900		r aciming			6641	Ordnance Equipment Mechanic
2805	Electrician	3910	5	Preservat	ion S	Servicina	6652	Aircraft Ordnance Systems Mechanic
2810	High Voltage Electrician	s	-			2011101119	ies 6900	WAREHOUSING AND STOCK HANDLING GROUP
2854	Electrical Equipment Repairing	7009	n e	Equipment of	Other	oning		Tools and Parts Attending
2892	Aircraft Electrician	TUU	7	Equipment	, WID	anny	- 1	Materials Handler
Series 3100	FABRIC AND LEATHER WORK GROUP							Materials Expediting
3105	Fabric Working	Sen	ies /300 i	LAUNDRY	'. DH	Y CLEANING, AND	PH	Materials Examining and Identifying
3106	Upholstering				7			Hazardous Waste Disposing
3111	Sewing Machine Operating	7304	4	Laundry V	Mounta	ina		Store Working
Series 3300	INSTRUMENT WORK GROUP	A no.	+	Launury v	YULK	liiy .	s 7000	PAGNING AND LECCESSING GROUP
3306	Optical Instrument Repairing	s	_					Packing
3314	Instrument Making	4402	5	Laundry N	racn	ine Operating	006	Preservation Servicing
3359	Instrument Mechanic	4413					7009	Equipment Cleaning
Series 3400	MACHINE TOOL WORK GROUP	4414	ss 7400 l	FOOD PRI	FΡΔI	RATION AND SEC	Series 7300	LAUNDRY, DRY CLEANING, AND PFESSING GROUP
3414	Machining	4416	Offset	I OOD I N		INATION AND 3	7304	Laundry Working
3416	Toolmaking	4417	Offset Press C	mana a			73.05	Laundry Machine Operating
	Die Sinking	Series 4600		Baking		rating	Series 7490	FOOD PREPARATION AND SERVING GROUP
Series 3500	GENERAL SERVICES AND SUPPORT WORK GROUP	4602	Blocking and Bracing				7402	Baking
	Laboring	4604	Wood Working		5426	Lock and Dam Operating	7404	Cooking
	Laboratory Working	4605	Wood Crafting		5438	Elevator Operating	7405	Bartending
3546	Railroad Repairing	4607	Carpentry		Series 5700	TRANSPORTATION/MOBILE EQUIPMENT OPERATION GROUP	7407	Meatcutting
3566	Custodial Working	4616	Patternmaking		5703	Motor Vehicle Operating	7408	Food Service Working
Series 3600	STRUCTURAL AND FINISHING WORK GROUP	Series 4700	GENERAL MAINTENANCE AN	D OPERATIONS WORK GROUP	5704	Fork Lift Operating	7420	Waiter
	Cement Finishing	4714	Model Making		5705	Tractor Operating	Series 7600	PERSONAL SERVICES GROUP
	Masonry	4742	Utility Systems Repairing - Opera	ating	5716	Engineering Equipment Operating	7603	Barbering
	Plastering	4749	Maintenance Mechanic		5725	Crane Operating		FLUID SYSTEMS MAINTENANCE GROUP
	Roofing	4754	Cemetery Caretaking		5729	Drill Rig Operating	8255	Pneudraulic Systems Mechanic
	Insulating	1	GENERAL EQUIPMENT MAINT	ENANCE GROUP	5736	Braking-Switching and Conducting	8268	Aircraft Pneudraulic Systems Mechanic
	METAL PROCESSING GROUP	4804	Locksmithing		5737	Locomotive Engineering	Series 8600	ENGINE OVERHAUL GROUP
	Welding	4805	Medical Equipment Repairing		5738	Railroad Maintenance Vehicle Operating	8602	Aircraft Engine Mechanic
3711	Electroplating	4806	Office Appliance Repairing		5786	Small Craft Operating		AIRCRAFT OVERHAUL GROUP
		4819	Bowling Equipment Repairing		Series 5800	TRANSPORTATION/MOBILE EQUIPMENT MAINTENANCE GROUP	8840	Aircraft Mechanical Parts Repairing
		4850	Bearing Reconditioning		5803	Heavy Mobile Equipment Mechanic	8852	Aircraft Mechanic
					5806	Mobile Equipment Servicing	8862	Aircraft Attending
					5823	Automotive Mechanic		

Who Has to Get It Right?

- 505 Military Occupational Specialties
 - 222 Directly Related to CPC
 - 283 Indirectly Related to CPC
- 471 Federal Civilian Classification Series
 - 68 Directly Related to CPC
 - 70 Indirectly Related to CPC
- 976 Potential Types of Army Positions
 - 290 HAVE to Get It Right
 - 353 Can Still Screw It Up

Everything Has to Go Exactly Right

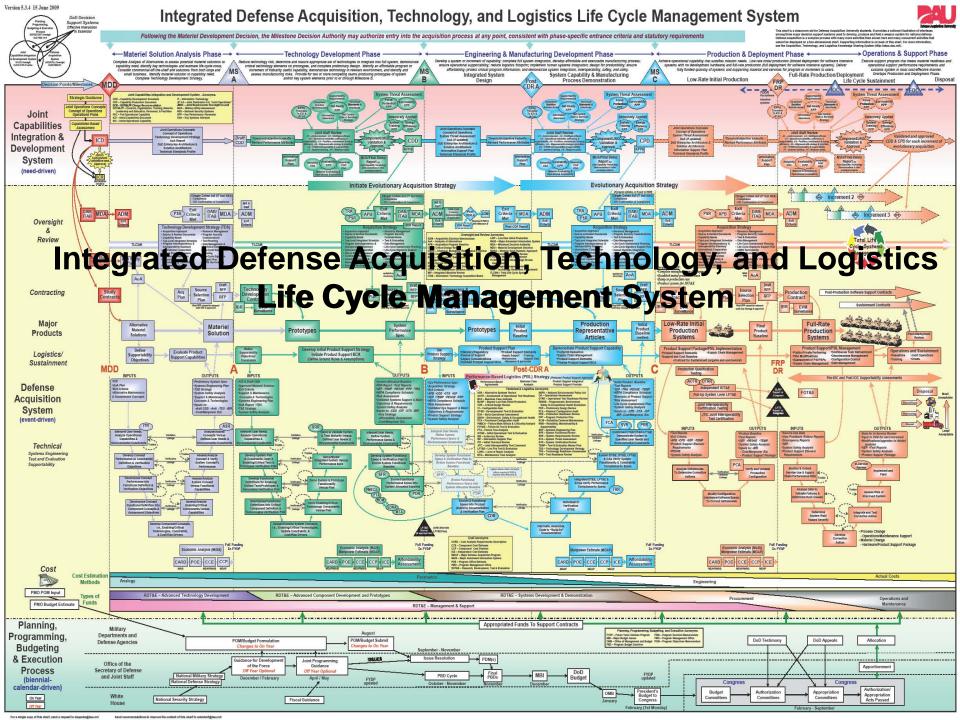
- If You Start With a Corrosion Resistant Design...
 - No Skip Welds
 - Abundant Drain Holes
 - Sound Material Selection
 - State of the Art / Marketplace Coatings and Treatments
- But Any of the Other "ilities" Are Not Done Right...
 - Insufficient Packaging
 - Outdoor Storage
 - Inconsistent Supply Logistics
 - Irregular Maintenance
 - Uncontrolled Climate Facilities

...You Still End Up with Corrosion

Everything Has to Go Exactly Right

- If You Start Without a Corrosion Resistant Design...
 - Skip Welds
 - Water Collection Areas
 - Galvanic Couples
 - Inferior Coatings and Treatments
- But All the Other "ilities" Are Done Right...
 - Sufficient Packaging
 - Indoor Storage
 - Consistent Supply Logistics
 - Regular Maintenance
 - Dehumidified Facilities

...You **Still** End Up with Corrosion



Who Has to Get It Right?

You Do!



If Not...

Corrosion: It's Your Fault

(Or at least that's my opinion anyway.)

Daniel P. Verdonik, Eng.Sc.D
 Hughes Associates, Inc.
 <u>danv@haifire.com</u>
 <u>daniel.p.verdonik@us.army.mil</u>
 703-604-7003 (office)
 443-253-7587 (cell)